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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,558	09/16/2003	Tadashi Ishizaki	SCL-003	2594
25962	7590	09/11/2006		
SLATER & MATSIL, L.L.P. 17950 PRESTON RD, SUITE 1000 DALLAS, TX 75252-5793			EXAMINER PATEL, RITA RAMESH	
			ART UNIT 1746	PAPER NUMBER

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/663,558	Applicant(s) ISHIZAKI ET AL.	
	Examiner Rita R. Patel	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Applicant's Amendments / Arguments

This Office Action is responsive to the amendment filed on 9/16/03. Claims 15-20 have been canceled. Claims 1-14 are pending. Claims 1, 3, 5, 9, and 14 have been amended. Applicant's arguments have been considered, but are not persuasive. Thus, claims 1-14 are finally rejected for the reasons of record.

Applicant claims the Hashimoto reference fails to teach or suggest that fluid that is provided from at least one fluid-providing path is flown from a gap between said surface and said main surface. However, as priorly disclosed in the formative Office Action, nozzles 50, 51, 52 supply cleaning solution to the rear surface of the substrate. Solution sprayed from these nozzles 50, 51, 52 traverse through the gap between the surface of the nozzles and the back surface of the wafer.

Furthermore, applicant contests that the Sumnitsch reference fails to teach or suggest a labyrinth seal structure which has a plurality of annular convex or concave portions. However, Sumnitsch discloses gear wheels 43 and gear rim 40 which each have teeth thereon, which mesh in order to connect and turn the individual gears. The teeth of gears are inherently formed in a way to link and connect with one another effectively. Also, the gear body of the gear wheel is inherently circular, thus the teeth thereon must have a base part that is similarly circular in shape. Thus, the teeth extending from each of the gears are respectively concave and convex, or vice versa, in

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order to fit together properly. Concavity and convexity are inherent properties of circular gears.

Claim Rejections - 35 USC § 112

Applicant has overcome prior 35 U.S.C. 112, first paragraph rejection over claims 1-8 and 14-15.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-8 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al. (US Patent No. 6,261,378) herein referred to as Hashimoto.

Re claims 1, 3-8 and 14-~~15~~, Hashimoto teaches a cleaning unit for a substrate comprising a holding mechanism for rotatably and horizontally holding the substrate wherein a spin chuck portion 35 is rotatably held by the pillar portion 36 through bearings 41 (col. 4, lines 1-2). Hashimoto discloses the rear surface processing solution supplying mechanism for said invention is composed of a plurality of nozzles 50, 51 that supply cleaning solution to the rear surface of the substrate held by the spin chuck portion 35. Nozzle 52 supplies dry gas to the center direction of the rear surface of the substrate; nozzles 50, 51 supply liquids (col. 4, lines 12-19). As seen in Figure 2

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of Hashimoto, the nozzles 50, 51, 52 spray into a path formed within a gap between the surface of the nozzles and the under surface of the wafer. A plurality of pins 40 are formed on the upper surface of the spin chuck portion 35, the pins 40 align and hold the substrate G above the main surface (col. 3, lines 66-67, col. 4, line 1). In Figure 5 of Hashimoto, cup 32 is illustrated and provides a seal portion for forming a non-contact seal between it and the first rotating member. In Figure 3 of Hashimoto, a shoulder portion is shown concentric to holes 50, 51. Also, Hashimoto discloses nozzles 141 to 148 are kept in parallel with the front surface of the substrate F, whereby the nozzles 141 to 144 supply a pressured cleaning solution (col. 9, lines 4-6).

Claims 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sumnitsch (US Patent No. 5,513,668).

Re claims 9-12, Sumnitsch teaches a apparatus with a support 1, intended for holding a disk-shaped article while treated with a treatment fluid, while mounted on a hollow supporting shaft 2 and can be set into rotation about its axis 11 by this shaft via a rotary drive mechanism 3 (col. 2, lines 58-63). Moreover, Sumnitsch teaches a gear rim 40 is accommodated in the space 31 and in the gap-shaped space 33, this gear rim 40 being coupled with the upper end 41 of the supporting shaft 2 and meshing with its radially outwardly extending peripheral teeth 42 with gear wheels 43 on shafts 44 which latter are received rotatably in bored in the annular member 21, where each shaft 44 carries a cam 45 arranged eccentrically to its axis of rotation (col. 3, lines 31-37). Such peripheral teeth 42 of said gear wheels 43 are also inherently convex or concave in

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shape because the base of the teeth are in a rounded shape, as the gear wheel is a circular shape. Said gear assembly also reads on applicant's claim of a first and second labyrinth seal portions which interconnect and provide a passageway for fluid to flow there through. Moreover, Sumnitsch teaches an annular nozzle 12 in the surface of the support 1 facing the article (col. 4, lines 51-52).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto as applied to claim 1 above.

Re claim 2, Hashimoto teaches the claimed invention, however, Hashimoto fails to teach the distance between the amount of the offset between a surface comprising a blow-off outlet and a main surface of said first rotating member to be about 2 mm or less. However, it would have been obvious to one having ordinary skill in the art to have determined the optimum values of the relevant process parameters through routine experimentation in the absence of showing of criticality. *In re Aller*, 105 USPQ 233 (CCPA 1955).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitsch as applied to claim 9 above.

Re claim 13, Sumnitsch discloses the claimed invention except for a detection means, such as a sensor for detecting the presence of the substrate. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a sensor to automatically detect the presence of the substrate for processing, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

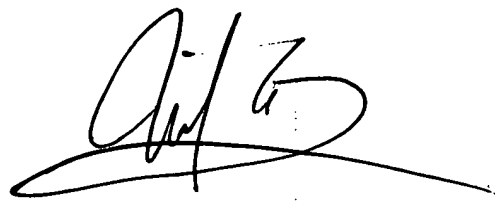
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RRP

A handwritten signature in black ink, appearing to read 'Michael Barr', with a large, sweeping underline that extends to the right.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER